LO-C.05 DEFINING THE INFLUENCE OF GENDER DISCORDANCE ON SURVIVAL FOLLOWING LIVING DONOR LIVER TRANSPLANTATION

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Background: Donor-recipient gender discordance has been suggested to be an independent predictor of poor outcomes following deceased donor liver transplantation (DDLT). Whether a similar trend occurs with living donor transplants (LDLT) remains ill defined. The present study sought to evaluate the association between gender mismatch and survival following LDLT.

Study Design: Patients that underwent LDLT were identified from the Organ Procurement and Transplant Network database (2000–2012), and categorized by the following donor-recipient gender groups: Female (F)/F, Male (M)/F, M/M, and F/M. Log rank test and multivariable Cox proportional hazards models were used to assess graft survival (GS) and overall survival (OS) of the study groups.

Results: A total of 3,143 LDLT were identified: 731 F/F, 794 M/F, 1,015 M/M, and 603 F/M. Ten year GS and OS were highest in the F/F group, at 62% and 71% respectively, as compared to M/F (53%, 66%), M/M (55%,62%), and F/M (55%,66%). Multivariate analysis demonstrated that gender mismatch was not associated with poorer GS (MM: Reference; MF: HR 1.22, $p = 0.06$; FF: HR 1.02, $p = 0.86$; FM: HR 1.18, $p = 0.18$). Independent factors associated with poorer GS included older recipient age (HR: 1.01, 95% CI: 1.00–1.02; $p = 0.01$), increasing donor age (HR: 1.01, 95%CI: 1.00–1.02; $p = 0.01$), higher Model for End-stage Liver Disease score (HR: 1.02, 95%CI: 1.01–1.04; $p = 0.003$), and left lobe allografts (HR: 2.08, 95%CI: 1.55–2.79; $p < 0.001$).

Conclusions: Donor-recipient gender discordance does not impact both GS and OS following LDLT. Living donor organ allocation in an era of supply limitation should not be influenced by donor gender.

LO-C.06 RECCURRENT HEPATOCELLULAR CANCER AFTER LIVER TRANSPLANTION: THE ROLE OF LIVER-DIRECTED THERAPY

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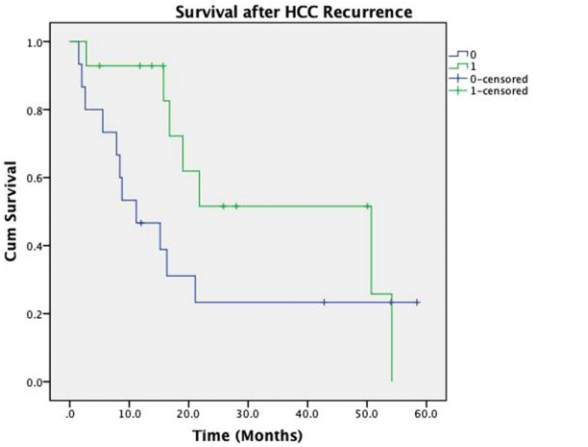
Introduction: Recurrence of hepatocellular cancer (HCC) after liver transplant (LT) generally carries a poor prognosis. We reviewed our experience to determine the role of liver-directed treatments.

Methods: Retrospective review of 10-year single center experience. All patients were within radiographic Milan criteria for HCC at the time of LT. Of 201 patients undergoing LT for HCC, 29 (14%) were identified with HCC recurrence.

Results: Mean and median time to recurrence after LT was 24 +/– 4 mo. and 15 mo. (range 3–160 mo.) respectively. Explant pathology showed that most patients (26/29) had pathologic staging exceeding Milan criteria. The initial recurrence was liver-only in 7 patients (24%), liver-dominant in 5 patients (17%) and systemic in 17 patients (59%). Time to recurrence was greatest in the liver-only group at mean 34 mo., followed by mean 24 mo. in the liver-dominant group and mean 14 mo. in systemic group. Patients with liver-only or liver-dominant tumor underwent a total of 57 loco-regional treatments (range 1–14). There were 3 significant treatment-related complications.

Survival: Mean survival after tumor recurrence in all patients was 15 +/– 4 mo. The 1 and 3 year survival after recurrence was 62% and 21% respectively. Patients undergoing liver-directed therapy had improved survival compared to the remainder of patients (25 mo. vs 14 mo., $p < .05$, figure).

Conclusions: HCC recurrence after LT is heterogeneous. Almost all recurrences are in patients with poor explant pathology. Aggressive liver-directed therapies are safe and effective in patients with liver-dominant recurrence and can lead to improved survival.



Patients undergoing liver-directed therapy for HCC recurrence (top line) had improved survival compared to those who did not (bottom line)

FRIDAY, MARCH 13, 2015, 4:30PM–6:30PM
LONG ORAL D – PANCREAS PERIOPERATIVE/TECHNIQUES

LO-D.01 IMPROVED PERIOPERATIVE OUTCOMES WITH EPIDURAL ANALGESIA IN PATIENTS UNDERGOING PANCREATECTOMY: A NATIONWIDE ANALYSIS

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Background: Despite scant evidence demonstrating benefit, epidural analgesia (EA) is often used for patients undergoing pancreatectomy. We sought to examine the impact of epidural analgesia on postoperative outcomes after pancreatectomy.

Methods: We used the 2008–2011 Healthcare Cost and Utilization Project Nationwide Inpatient Sample to examine the effect of EA on perioperative outcomes. Student's t tests and

chi-square tests were used for univariable comparisons. Multivariable logistic and linear regression with propensity score matching were utilized for risk-adjusted comparisons. **Results:** 12,440 patients underwent pancreatectomy. Of these, 1,130 (9.1%) patients received epidural analgesia. Patients who received EA were significantly more likely to be male, undergo pancreaticoduodenectomy, have cancer, and undergo surgery at higher volume centers. By univariate comparison, patients who received EA had significantly lower rates of pneumonia, blood transfusions, and acute renal failure, and this was associated with decreased postoperative length of stay (LOS), lower hospital charges, and decreased postoperative mortality. In multivariate analyses, EA was independently associated with decreased postoperative LOS (adjusted mean difference = –1.2 days, $p < 0.01$), decreased hospital charges (adjusted mean difference = –$16,814, $p < 0.01$), and decreased postoperative mortality (adjusted OR = 0.42, $p < 0.01$). Using 1 : 1 propensity score matching, patients who received EA (n = 1,070) had significantly decreased postoperative LOS (11.0 days vs 12.1 days, $p = 0.01$), lower hospital charges ($112,086 vs $128,939, $p < 0.01$), and decreased postoperative mortality (1.5% vs 3.6%, $p < 0.01$) compared to matched controls without EA (n = 1,070) (Table).

Conclusion: EA is associated with improved perioperative outcomes and reduced hospital charges following pancreatectomy. Additional studies are required to fully understand if this relationship is causative.

Table. Propensity Score Matched Comparison of Patients with and without Epidurals

Characteristic	Mean (SD) or No. (Column %)		
	No Epidural (n=1070)	Epidural (n=1070)	Standardized Difference*
Age, y			
Mean (SD)	63.0 (13.2)	62.3 (13.2)	4.8%
Sex			
Male	531 (49.6%)	537 (50.2%)	1.1%
Female	539 (50.4%)	533 (49.8%)	
Race			
White	669 (62.5%)	678 (63.4%)	3.2%
Black	57 (5.3%)	62 (5.8%)	
Other	344 (32.2%)	330 (30.8%)	
Comorbidities			
CHF	27 (2.5%)	27 (2.5%)	<1.0%
Chronic Lung Disease	143 (13.4%)	147 (13.7%)	1.1%
Diabetes	327 (30.6%)	306 (28.6%)	4.3%
Chronic Renal Failure	29 (2.7%)	39 (3.6%)	5.3%
Obesity	69 (6.5%)	74 (6.9%)	1.9%
Weight Loss	166 (15.5%)	171 (16.0%)	1.3%
Alcohol Abuse	26 (2.4%)	33 (3.1%)	4.0%
Drug Abuse	14 (1.3%)	17 (1.6%)	2.4%
Insurance			
Private	474 (44.3%)	475 (44.4%)	4.4%
Medicaid	55 (5.1%)	61 (5.7%)	
Self Pay	29 (2.7%)	35 (3.3%)	
Medicare	512 (47.9%)	499 (46.6%)	
Pancreatectomy type			
Whipple	808 (75.5%)	804 (75.1%)	3.2%
Total	38 (3.6%)	33 (3.1%)	
Distal	224 (20.9%)	233 (21.8%)	
Diagnosis			
Malignant	782 (73.1%)	751 (70.2%)	6.4%
Benign	288 (26.9%)	319 (29.8%)	
Hospital Pancreatectomy Volume Quartile			
1st (<22 cases)	223 (20.8%)	211 (19.7%)	3.6%
2nd (22-69 cases)	292 (27.3%)	295 (27.6%)	
3rd (70-139 cases)	220 (20.6%)	215 (20.1%)	
4th (>130 cases)	335 (31.3%)	349 (32.6%)	
Hospital Teaching Status			
Teaching	884 (82.6%)	902 (84.3%)	4.5%
Non-Teaching	186 (17.4%)	168 (15.7%)	
AHA Hospital Size			
Small	49 (4.6%)	56 (5.2%)	3.8%
Medium	136 (12.7%)	143 (13.4%)	
Large	885 (82.7%)	871 (81.4%)	
Outcomes			**P Value**
Postop Length of Stay, days	**12.1 (10.8)**	**11.0 (10.4)**	**0.011**
Charges, $	**128,939 (127,783)**	**112,086 (110,782)**	**0.001**
Hospital Mortality	**38 (3.6%)**	**16 (1.5%)**	**0.002**

* Standardized Difference < 10% indicates minimal covariate imbalance between propensity matched cohorts (Austin et al. Stat Med. 2009)

LO-D.02 IMPACT OF MARGIN STATUS ON SURVIVAL IN MAIN DUCT INVOLVED INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM

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Background: The natural history of Main Duct (MD)-involved Intraductal Papillary Mucinous Neoplasm (IPMN) is poorly understood. We examined the impact of pancreatic margin status on recurrence and survival, and whether there is benefit of total pancreatectomy (TP) over partial pancreatectomy (PP).

Methods: A retrospective review of a prospectively maintained database of patients who underwent resection for IPMN at a single academic center (2000–2013) was performed.

Results: 152 patients with MD-involved IPMN were included in this study. Of them, 15 underwent TP and 137 PP. Median follow-up was 41 months. There was no difference in surgical (postoperative complications, hospital stay) and long-term outcomes (malignant recurrence, overall survival OS and disease-free survival DFS) between TP and PP groups. In patients who underwent PP, there was no difference in OS according to the presence of IPMN at margin (96 vs 123 months, $p = 0.18$). However, when present, degree of IPMN dysplasia at the margin (low vs moderate vs high vs invasive) impacted OS (84 vs 8 vs 13 vs 9 months, respectively $p = 0.002$). In addition, topography of positive margin in the ductal system (main vs branch vs mixed) impacted DFS (19 vs 65 vs 34 months, respectively $p = 0.009$).

Conclusion: Positive margin status in main-duct involved IPMN may have effects on patient survival. Involvement of the main duct at the margin, and higher degrees of IPMN dysplasia at the margin predict a worse survival. Total pancreatectomy may need careful consideration in select patients in these groups.

LO-D.03 INCREASED MORBIDITY AND MORTALITY OF CONCOMITANT COLECTOMY DURING PANCREATICODUODENECTOMY: A NSQIP PROPENSITY SCORE MATCHED ANALYSIS

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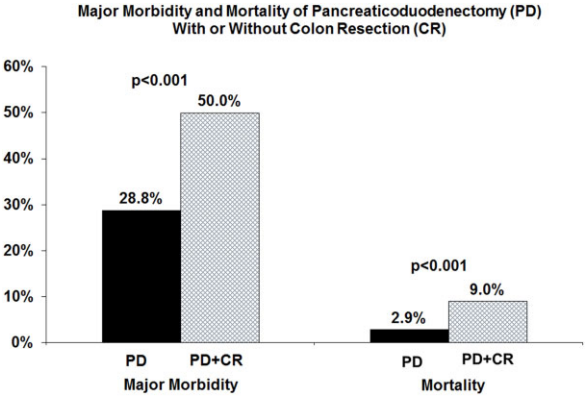
Introduction: Select patients with periampullary cancers require concomitant colon resection (CR) during pancreaticoduodenectomy (PD) for margin-negative resections. This study analyzed the impact of concomitant CR on post-PD major morbidity and mortality using a large national dataset.

Methods: National Surgical Quality Improvement Program (NSQIP) patients undergoing PD for periampullary cancers (with/without CR) from 2005–2012, were screened. A 4 : 1

propensity score matched analysis was constructed to isolate the impact of CR upon PD. Risk factors for 30-day major morbidity and mortality were analyzed to determine the post-operative sequelae of PD + CR.

Results: Of 10,965 PD and 159 PD + CR patients in total, 624 and 156, respectively, were selected for the 4 : 1 matched analysis. PD + CR resulted in significantly higher major morbidity and mortality (50.0% and 9.0%) vs. PD alone (28.8% and 2.9%, respectively, $p < 0.001$). Multivariate analysis identified the following risk factors for major morbidity after PD: concomitant CR (OR-3.19, $p < 0.001$), smoking history (OR-1.92, $p = 0.005$), lack of functional independence (OR-3.29, $p = 0.018$), cardiac disease (OR-2.39, $p = 0.011$), decreased albumin (per g/dL, OR-1.38, $p = 0.033$), and longer operative time (vs. median time, OR-1.56, $p = 0.029$). Independent predictors of mortality included concomitant CR (OR-3.16, $p = 0.010$), ventilator dependence (OR-13.87, $p < 0.001$), and septic shock (OR-6.02, $p < 0.001$).

Conclusion: Contrary to previous single-institution studies, this propensity score matched analysis using the NSQIP dataset showed that adding CR to PD significantly increased the magnitude of surgery and was an independent predictor of both major morbidity and mortality. Using high-resolution imaging, patients who may need PD + CR should be identified preoperatively, maximally optimized, and referred to expert centers.



LO-D.04 LAPAROSCOPIC PANCREATICODUODENECTOMY DOES NOT COMPLETELY MITIGATE INCREASED PERI-OPERATIVE RISKS IN ELDERLY PATIENTS SEEN WITH OPEN PANCREATICODUODENECTOMY

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Background: The effect of totally laparoscopic pancreaticoduodenectomy (TLPD) in elderly patients has not been evaluated. We hypothesize that increased peri-operative risks associated with open pancreaticoduodenectomy (OPD) in elderly patients may be mitigated with TLPD.

Methods: A review of prospectively collected data on all pancreaticoduodenectomy (PD) was conducted from August 2008 to January 2014 (N = 756). Elderly patients (Age ≥70 years, N = 281) were compared to non-elderly patients (Age <70 years, N = 475) with respect to risk-adjusted peri-operative morbidity and mortality. Differences in outcomes between TLPD (N = 106) versus OPD (N = 175) were evaluated in the elderly subgroup in an intention-to-treat analysis.

Results: Elderly patients have increased risk of ICU admission, any cardiac event, and pneumonia following PD compared to non-elderly patients. TLPD in elderly patients is associated with decreased risk of surgical site infection (SSI) and delayed gastric emptying (DGE) as well as decreased estimated blood loss (EBL) and transfusion. Only factors that were statistically significant on multivariate analysis are reported in the results table. All other outcomes (pancreatic fistula, hemorrhage, length of stay, etc.) were not statistically significant on multivariate analysis.

Conclusions: Elderly patients undergoing TLPD experience a similar risk of 90-day mortality, ICU admission, and cardiopulmonary events compared to patients undergoing OPD. TLPD does appear to offer benefits to the elderly with respect to decreased EBL, DGE, and SSI.

Outcome	All Patients				Elderly Patients Only			
	Non-Elderly	Elderly	Multivariate Analysis	P-Value	TLPD	OPD	Multivariate Analysis	P-Value
90-day mortality	1.89%	3.56%	OR = 1.14	0.7930	4.72%	2.86%	OR = 1.61	0.5381
ICU Admission	14.32%	23.13%	OR = 1.70	**0.0188**	22.64%	23.43%	OR = 1.10	0.7780
Cardiac Event	5.18%	14.08%	OR = 4.58	**<.0001**	18.75%	11.11%	OR = 2.16	0.0766
Pneumonia	5.47%	10.1%	OR = 2.14	**0.0441**	15.0%	7.0%	OR = 2.27	0.1134
SSI	9.05%	8.54%	OR = 1.10	0.7343	3.77%	11.43%	OR = 0.31	**0.0477**
DGE	14.32%	14.95%	OR = 1.16	0.5221	8.49%	18.86%	OR = 0.41	**0.0393**
EBL	754 ml	719 ml	Δ = 35 ml	0.3510	531 ml	835 ml	Δ = -304 ml	**0.0143**
Transfusion	0.56 U	0.76 U	Δ = -0.2 U	0.1713	0.43 U	0.96 U	Δ = -0.53 U	**0.0409**

LO-D.05 FACTORS INFLUENCING FAILURE TO RESCUE AFTER PANCREATICODUODENECTOMY: A NSQIP PERSPECTIVE

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Background: Previous studies have identified structural factors that may impact the failure to rescue rate after pancreaticoduodenectomy (PD). The goal of this study is to identify patient-level factors associated with failure to rescue in order to guide interventions that prevent progression to mortality.

Methods: Patients undergoing PD as the primary procedure were identified from the 2005–2012 National Surgical Quality Improvement Project (NSQIP) Participant Data Use (PUF) files. Since NSQIP only measures mortality for 30 days post-operatively, we treated failure to rescue as time to event data and analyzed it using Cox proportional hazards methods.

Results: A total of 14,546 patients were available for analysis. Of these, 1137 (7.8%) experienced only a minor complication while 5321 (36.6%) experienced at least one severe complication. Failure to rescue rate was 0% vs. 5.9%, respectively ($p < 0.001$). Failure to rescue rates were 1.2%, 4.2% and 18.6% in patients experiencing a total of 1, 2 or 3+ serious complications ($p < 0.001$). Results from univariable Cox regression were used to build a multivariable Cox model which was refined by AIC criteria. Factors significantly influencing failure to rescue after serious complication included number of complications, resident participation, age, reoperation, and dyspnea (Table 1).

Conclusions: Essentially all patients who experience postoperative mortality after PD first had a serious complication. Interestingly, our analysis shows that it is not the first postoperative complication, but instead the accumulation of multiple events that results in failure to rescue. Preventing this progression should be the focus of future quality improvement efforts.

** p<0.01, * p<0.05

	Hazard Ratio	Standard Error	95% CI	p
Age				
<55	*Reference*			
55-62	1.189	0.292	0.734 - 1.924	0.482
63-68	1.446	0.35	0.899 - 2.325	0.128
69-75	1.818*	0.433	1.140 - 2.898	0.0121
76+	2.130**	0.51	1.332 - 3.406	0.0016
Smoker	0.758	0.122	0.553 - 1.038	0.0837
Dyspnea	1.399*	0.206	1.047 - 1.867	0.0229
Severe COPD	1.207	0.264	0.786 - 1.852	0.39
Hypertension	1.29	0.185	0.973 - 1.709	0.0763
Disseminated Cancer	1.793**	0.396	1.163 - 2.764	0.0082
Weight Loss	1.257	0.178	0.952 - 1.659	0.106
Portal Hypertension (Ascites/Varices)	2.265*	0.8	1.134 - 4.526	0.0206
Reoperation	1.496**	0.19	1.167 - 1.918	0.00148
BMI				
<20	*Reference*			
20-28.8	0.904	0.204	0.581 - 1.406	0.654
28.8-35	1.043	0.255	0.646 - 1.683	0.863
>35	1.039	0.289	0.603 - 1.791	0.89
Platelet Count				
Thrombocytosis	0.803	0.182	0.516 - 1.251	0.332
Thrombocytopenia	1.320	0.257	0.901 - 1.932	0.154
Elevated INR	1.682**	0.317	1.162 - 2.434	0.00585
Anemia	0.845	0.102	0.667 - 1.070	0.162
ASA				
1/2	*Reference*			
3	1.703**	0.342	1.149 - 2.523	0.00795
4/5	1.602	0.421	0.957 - 2.683	0.0729
Resident Participation				
Attending Alone	*Reference*			
Resident	0.630**	0.104	0.456 - 0.870	0.00506
Unknown	0.464**	0.0881	0.320 - 0.673	5.23E-05
Number of Serious Compications				
1	*Reference*			
2	3.675**	0.89	2.286 - 5.906	7.64E-08
3+	12.84**	2.826	8.343 - 19.77	0

LO-D.06 THE IMPACT OF RECENT HOSPITALIZATION ON SURGICAL SITE INFECTION FOLLOWING PANCREATECTOMY

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Background: Surgical site infections (SSI) are a major cause of increased morbidity and cost after pancreatectomy. Patients undergoing pancreatectomy frequently have had recent inpatient hospital admissions *prior* to their surgical admission (recent presurgical admission, RPSA), which could increase the risk of SSI. We sought to examine the impact of RPSA on SSI following pancreatectomy.

Methods: We used the 2009–2011 Healthcare Cost Utilization Project California State Inpatient Database. RPSA was defined as hospital stays >48 hrs with a discharge date within 30 days prior to admission for pancreatectomy. We used Chi-square tests, Student's t tests, and multivariable logistic regression.

Results: 3,376 patients underwent pancreatectomy, and 444 (13.2%) had RPSA. The most common RPSA diagnoses were pancreatitis (n = 164, 36.9%) and biliary obstruction (n = 255, 57.4%), and 235 (52.9%) underwent an endoscopic procedure during RPSA. 180 (40.5%) RPSAs were to *different* hospitals other than where patients' pancreatectomy took place. In univariate analysis, patients with RPSA had a significantly higher rate of postoperative SSIs, and this was associated with longer length of postoperative stay, higher postoperative hospital costs, and increased postoperative 30-day readmission rates (Table). In Multivariate analysis, RPSA was an independent predictor of postoperative SSI (OR = 1.68, p = 0.013), and the risk of SSI increased with increasing RPSA length of stay (OR = 1.07 per day, p = 0.001).

Conclusions: RPSA is an important risk factor for SSI after pancreatectomy. Many patients with RPSA are not admitted preoperatively to the same hospital where pancreatectomy occurs; in such circumstances, SSI rates may not be a sole reflection of the care provided by operating hospitals.

Table. Postoperative Outcomes of Patients with and without Recent Hospital Admissions Prior to Pancreatectomy (n=3,376)

Variable	No Recent Admission (n=2932)	Recent Admission (n=444)	P value
Superficial/Deep Incisional Surgical Site Infection (%)	288 (9.8%)	64 (14.4%)	**0.003**
Organ Space Surgical Site Infection (%)	163 (5.6%)	36 (8.1%)	**0.034**
Any Surgical Site Infection (%)	339 (11.6%)	77 (17.4%)	**<0.001**
Postoperative Length of Hospital Stay, median days (SD)	9 (10.8)	11 (11.5)	**<0.001**
Postoperative Hospital Costs, median $ (SD)	40,927 (44,342)	53,909 (54,986)	**<0.001**
Postoperative 30-Day Readmission (%)	591 (20.8%)	115 (27.1%)	**0.003**

LO-D.07 PANCREATECTOMY WITH VEIN RESECTION/RECONSTRUCTION: TECHNIQUE MATTERS

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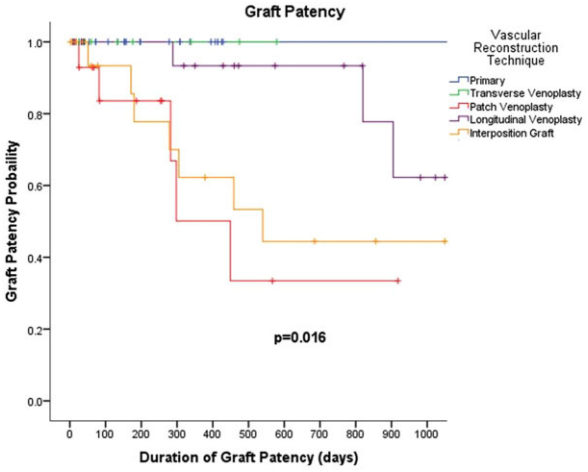
Introduction: A variety of techniques have been described for portal vein (PV) and/or superior mesenteric vein (SMV) resection/reconstruction during pancreatectomy. The ideal strategy remains unclear.

Methods: Using a prospective database, we identified all patients between 2005–2014 who underwent PV/SMV resection/reconstruction during pancreatectomy (subtotal/total/whipple) for all diagnoses. We reviewed the medical records and imaging for operative details and outcomes, with special emphasis on patency.

Results: Ninety patients underwent vein resection/reconstruction with one of five techniques:1) longitudinal venorrhaphy (n = 17, 19%); 2) transverse venorrhaphy (n = 9, 10%); 3) primary end-to-end (n = 28, 31%); 4) patch venoplasty (n = 17, 19%); and 5) interposition graft (n = 19, 21%). With median follow-up (last available imaging to assess patency) of 282 dys, thrombosis was observed in 16/90 (18%). The rate of thrombosis varied according to technique. All patients with primary end-to-end or transverse venorrhaphy remained patent. Longitudinal venorrhaphy, patch closure, and interposition graft were all associated with significant rates of thrombosis (25%, 31%, 44%, respectively, $p < 0.01$ vs no thrombosis). Comparing those thrombosed to those that remained patent, there were no differences with respect to pancreatectomy type, preoperative knowledge of vein involvement, and neoadjuvant therapy. Patients with thrombosis had significantly longer operative times (480 vs 401 min,$p < 0.01$) and increased blood loss (1150 vs 600 mL,$p < 0.05$). Post-operative heparin drip was used in only 7%. Prophylactic aspirin was used in 69% of the total cohort (66% of patent, 81% of thrombosed) and showed no protective benefit.

Conclusions: Primary end-to-end and transverse venorrhaphy have better patency than the alternatives after PV/SMV resection and should be the preferred techniques for short (<3 cm reconstructions).



LO-D.09 DISTAL PANCREATECTOMY WITH CELIAC AXIS RESECTION: WHAT ARE THE ADDED RISKS?

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Background: Surgeons have become aggressive at operating on tumors of the body of the pancreas which require resection of the celiac axis (Appleby procedure). Reported series are small and not adequately controlled. The aim of this analysis was to report a large series of Appleby procedures with a comparison group to determine the relative risk.

Methods: Data were gathered through the American College of Surgeons-National Surgical Quality Improvement Program, Pancreatectomy Demonstration Project. Over 14 months, 822 patients underwent a distal pancreatectomy (DP) at 43 institutions. Twenty of these patients (2.4%) also underwent celiac axis resection (CAR). Appleby procedure patients were then matched by age, gender, BMI, serum albumin, ASA class, gland texture, duct size and pathology to 180 patients undergoing DP without CAR. Operative and postoperative outcomes were compared by Fisher's Exact and Wilcoxon tests.

Results: The median age of the DP and DP + CAR patients was 65 and 64 years, respectively. Most patients were female (67 and 70%). The mean BMI of the two groups was identical (27.1 kg/m^2). The majority of patients had adenocarcinomas (63 and 60%) or neuroendocrine tumors (13 and 15%). Operating Room (OR) and postoperative outcomes are presented in the table.

Conclusions: Distal pancreatectomy with celiac axis resection is associated with increased operative time, renal failure and a 10% operative mortality. The decision to offer an Appleby procedure should be made with full disclosure of the increased risks.

Group	Operative Time (mins)	Perioperative Transfusions	Acute Renal Failure	Return to OR	30-day Mortality
DP	234	20%	0.5%	1.7%	0.5%
DP+CAR	305*	35%	10.0%*	10.0%	10.0%*

* p<0.03 vs DP

LO-D.10 SURGICAL MANAGEMENT OF CHRONIC PANCREATITIS: A THERAPY IN DECLINE?

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Background: Surgical intervention is uncommon in chronic pancreatitis management. Literature largely describes single institution or international experiences. This study describes US-based chronic pancreatitis surgical management and its impact on readmission rates.

Methods: Retrospective analysis of chronic pancreatitis patients in Healthcare Cost and Utilization Project Florida State Inpatient Database 2007–2011 using revisit variables. Patients with malignancy or congenital abnormalities excluded. Surgical interventions and complications of chronic pancreatitis identified using ICD-9 codes. Univariate analysis of sex, Elixhauser score, race, insurance, complications, receipt of surgery by chi-square. Number of readmissions, time to surgery by Wilcoxon rank sum. Multivariate analysis of operative management by logistic regression.
Results: 21,448 chronic pancreatitis patients. 6.18% (1,325) underwent surgery including 629 with drainage procedures, 275 with pancreatectomies, 735 with cholecystectomies. Procedures decreased from 8.65% in 2007 to 3.10% in 2011 ($p < 0.0001$). 12.95% (2,778) developed pancreatitis-related complications: pancreatic cysts or pseudocysts (4.40%), diabetes (10.02%). Pancreatic exocrine insufficiency in <11 patients. Median number of readmissions 1 (IQR 0–4) and 5 (IQR 2–9) among non-surgical and surgical patients, respectively ($p < 0.001$). Median number of admissions prior to pancreatectomy was 2 (IQR 1–4) and drainage procedure was 2 (IQR 1–6). Predictors of surgical intervention displayed in table.
Conclusions: Chronic pancreatitis leads to numerous inpatient readmissions and difficult to manage complications. Surgical intervention occurs in a declining minority of cases. Complicated patients are more likely to undergo surgery; operative patients experience more admissions than nonoperative patients. The complexities of chronic pancreatitis management warrant early multidisciplinary evaluation and ongoing consideration of surgical and nonsurgical options.

Univariate and multivariate logistic regression models of receiving surgery for chronic pancreatitis

	Unadjusted			Adjusted		
	Odds Ratio	95% Confidence Interval		Odds Ratio	95% Confidence Interval	
Female (vs. Male)	0.974	0.871	1.089	1.020	0.909	1.143
Elixhauser Score (vs. 0)						
1	0.932	0.728	1.192	1.011	0.787	1.299
2	0.793	0.625	1.006	0.916	0.718	1.169
≥3	**0.636**	**0.511**	**0.792**	**0.778**	**0.620**	**0.976**
Low Income (vs. High)	0.934	0.831	1.051	0.982	0.870	1.109
Age (in years)	**0.979**	**0.976**	**0.983**	**0.982**	**0.978**	**0.987**
Insurance (vs. Private)						
Medicare	**0.505**	**0.439**	**0.581**	**0.748**	**0.637**	**0.878**
Medicaid	**0.821**	**0.690**	**0.977**	**0.830**	**0.692**	**0.994**
Missing/Other	**0.678**	**0.580**	**0.793**	**0.657**	**0.559**	**0.771**
White Race (vs. Non-white)	0.962	0.851	1.089	0.942	0.829	1.070
Pancreatic Cyst or Pseudocyst	**4.739**	**4.012**	**5.598**	**4.412**	**3.725**	**5.225**
Diabetes Mellitus	**1.379**	**1.168**	**1.629**	**1.412**	**1.190**	**1.676**

FRIDAY, MARCH 13, 2015, 4:30PM–6:30PM
LONG ORAL E – LIVER ONCOLOGY

LO-E.01 NEOADJUVANT CHEMOTHERAPY DOES NOT IMPAIR LIVER REGENERATION FOLLOWING MAJOR HEPATECTOMY OR PORTAL VEIN EMBOLIZATION FOR COLORECTAL LIVER METASTASES

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Introduction: Treatment strategies for colorectal liver metastasis (CRCLM) such as major hepatectomy and portal vein embolization (PVE) rely on the regenerative capacity of the liver. Neoadjuvant chemotherapy is most often used with patients undergoing these procedures. We aimed to investigate the effect of neoadjuvant chemotherapy on liver regeneration after PVE and after major hepatectomy.
Methods: All CRCLM patients undergoing PVE or major resection (without PVE) with 3D liver volumetry measurements were included. Liver regeneration (expressed as future liver remnant (FLR) and percentage of liver regeneration(% LR)), total liver volume (TLV) and clinical characteristics were collected from our CRCLM database.
Results: Between 2003–2013, 226 patients were included (85 major resections, 141 PVE). Mean age was 63 ± 12 years old and median number of cycles was 6(5–8). In each group, overall adequate regeneration was observed (+96.5% in FLR ($p < 0.001$) post PVE and +45.8% in FLR ($p < 0.001$) post resection). In the PVE group, chemotherapy variables did not show significant association with the amount of liver regeneration (number of cycles ($p = 0.435$), timing ($p = 0.563$), chemotherapy agent ($p = 0.116$)). Similarly in the major hepatectomy group, neoadjuvant chemotherapy administration did not show a significant association with %LR ($p = 0.592$) or with other treatment variables (number of cycles, $p = 0.114$; agent, $p = 0.061$, timing, $p = 0.126$). In both groups, the predicted FLR was inversely correlated with the % in liver regeneration only ($p < 0.001$).
Conclusion: Neoadjuvant chemotherapy does not seem to affect the liver regeneration. The predicted FLR only is inversely correlating with the amount of LR occurring after major resection or after PVE.